

CLAIMS

- 1 1. A composition, comprising:
2 a catalyst; and
3 a non-electrolytic material different than the catalyst,
4 wherein the catalyst and the non- electrolytic material compose a fuel cell electrode.
- 1 2. The composition of claim 1, wherein the catalyst is capable of catalyzing
2 oxidation of a fuel cell gas.
- 1 3. The composition of claim 2, wherein the fuel cell gas comprises hydrogen.
- 1 4. The composition of claim 1, wherein the catalyst is capable of undergoing
2 reversible oxide formation.
- 1 5. The composition of claim 1, wherein the catalyst is selected from a group
2 consisting of platinum, ruthenium, iridium, rhodium, palladium, molybdenum and alloys
3 thereof.
- 1 6. The composition of claim 1, wherein the composition comprises between about
2 5 percent to about 40 percent of the catalyst.
- 1 7. The composition of claim 1, wherein the composition comprises less than about
2 30 percent of non-electrolytic material by weight.
- 1 8. The composition of claim 1, wherein the non-electrolytic material comprises a
2 fluorine-containing resin.
- 1 9. The composition of claim 1, wherein the non-electrolytic material comprises a
2 copolymer of tetrafluoroethylene and hexafluoropropylene.
- 1 10. The composition of claim 1, wherein the non- electrolytic material comprises
2 polytetrafluoroethylene.

1 11. The composition of claim 1, further comprising:
2 a first material resistant to oxidation up to about 3.0 Volts vs. SHE.

1 12. The composition of claim 11, wherein the catalyst is distributed on the first
2 material.

1 13. The composition of claim 11, wherein the catalyst is distributed on the first
2 material with a load between about 5 percent and about 95 percent.

1 14. The composition of claim 11, wherein the first material comprises an oxide.

1 15. The composition of claim 11, wherein the first material is selected from a group
2 consisting of tungsten oxide, zirconium oxide, niobium oxide, and tantalum oxide.

1 16. A composition, comprising:
2 a catalyst; and
3 a first material resistant to oxidation up to about 3.0 Volts vs. SHE,
4 wherein the catalyst and the first material compose a fuel cell electrode.

1 17. The composition of claim 16, wherein the catalyst is distributed on the first
2 material.

1 18. The composition of claim 16, wherein the catalyst is distributed on the first
2 material with a load between about 5 percent and about 95 percent.

1 19. The composition of claim 16, wherein the first material comprises an oxide.

1 20. The composition of claim 16, wherein the first material is selected from a group
2 consisting of tungsten oxide, zirconium oxide, niobium oxide, and tantalum oxide.

1 21. A composition, comprising:
2 a catalyst capable of catalyzing oxidation of a fuel cell gas;
3 a first material resistant to oxidation up to about 3.0 Volts vs. SHE; and

4 a non- electrolytic material,
5 wherein the catalyst, the first material, and the non-electrolytic material compose a
6 fuel cell electrode.

1 22. The composition of claim 21, wherein the catalyst comprises platinum.

1 23. The composition of claim 21, wherein the first material comprises an oxide.

1 24. The composition of claim 21, wherein the non- electrolytic material comprises
2 polytetrafluoroethylene.